CLAIMS:

1 - 18. (Cancelled)

19. (Previously Presented) In a CPAP apparatus having (i) a blower, (ii) a patient interface, (iii) an air delivery conduit for delivering air from the blower to the patient interface, (iv) a sensor adapted to generate a first signal determined from pressure in the patient interface, (v) a sensor adapted to generate a second signal determined from flow of air to the patient, (vi) a synchrony module programmed to determine transitions between inspiration and expiration of the patient's breathing cycle from at least one of said sensors, and (vii) a control mechanism programmed to provide a supply of air from said blower to the patient interface at positive pressure in accordance with a pressure-time template, a method of controlling the blower operation comprising the steps of:

automatically determining from at least one of said first and second signals the presence of a first sleep disordered breathing event; said first sleep disordered breathing event being categorized as an apnea, a hypopnea, or a snore; and

automatically determining from at least one of said first and second signals whether there is present a second sleep disordered breathing event; said second sleep disordered breathing event characterized by flow flattening, where said first and second events are determined from different characteristics of said first and second signals,

automatically determining a first treatment pressure in accordance with the first sleep disordered breathing event and a second treatment pressure in accordance with the second sleep disordered breathing event,

setting a pressure parameter of the pressure-time template to the first treatment pressure during the expiration phase of the patient's breathing cycle and setting a pressure parameter of the pressure-time template to the second treatment pressure during the inspiratory phase of the patient's breathing cycle, and

controlling the blower to deliver a supply of air at positive pressure to the patient interface in accordance with the template and in synchrony with the patient's breathing cycles as determined by the synchrony module.

20-21. (Cancelled)

22. (Previously Presented) A method in accordance with claim 19 in which said template is one of a square wave and a shark-fin wave.

23. (Previously Presented) A method in accordance with claim 19 in which the first treatment pressure is an EPAP and the second treatment pressure is an IPAP.

24-29. (Cancelled)

30. (Previously Presented) A method in accordance with claim 19 in which the pressure-time template has a maximum allowable swing between the first treatment pressure and the second treatment pressure.

31. (Previously Presented) A method in accordance with claim 20 wherein the first treatment pressure is decreased in the absence of an indication of apnea, hypopnea and snoring.

32. (Previously Presented) A method in accordance with claim 21 wherein the second treatment pressure is decreased in the absence of an indication of flow flattening and snoring.

33. (Previously Presented) A method in accordance with claim 19 wherein said pressure-time template is stored in look-up tables or arrays.

34. (Previously Presented) An apparatus for treatment of sleep disordered breathing comprising:

a blower for providing to a patient a supply of air at a treatment pressure in phase with the patient's respiratory breathing cycle, the respiratory breathing cycle including an expiratory phase and an inspiratory phase;

a patient interface;

an air delivery conduit for delivering air from the blower to the patient interface;

a first sensor adapted to generate a first signal determined from the pressure in the patient interface;

a second sensor adapted to generate a second signal determined from the flow of air to the patient through the patient interface;

a synchrony module for detecting transitions between inspiration and expiration of the patient's breathing cycle from at least one of said sensors; and

a controller programmed to:

(1) receive said first and second signals and in response thereto detect the presence of first and second sleep disordered breathing events, the first event being at least one of an apnea, a hypopnea, or a snore and the second event being a different flow limitation; and

(2) set a first pressure as a function of the occurrence of the first event and set a second pressure as a function of the occurrence of the second event, the first pressure being used to determine the treatment pressure provided during the expiratory phase of the breathing cycle and the second pressure being used to determine the treatment pressure provided during the inspiratory phase of the breathing cycle.

35. (Cancelled)

36. (Previously Presented) The apparatus according to claim 34 wherein the second event is flow flattening.

37. (Previously Presented) The apparatus according to claim 34 wherein the first pressure is an EPAP or EEP pressure.

38. (Previously Presented) The apparatus according to claim 34 wherein the second pressure is an IPAP pressure.

39. (Cancelled)

40. (Previously Presented) The apparatus according to claim 39 wherein there is a predetermined maximum pressure difference between the first pressure and the second pressure.

41-42. (Cancelled)

43. (Previously Presented) The apparatus according to claim 34 wherein the controller is further programmed to provide the supply of air at positive pressure in accordance with a pressure-time template.

44. (Previously Presented) The apparatus according to claim 43 wherein the pressure-time template is a square wave.

45. (Previously Presented) The apparatus according to claim 43 wherein the pressure-time template is a shark-fin wave.

46. (Previously Presented) The apparatus according to claim 43 wherein the pressure-time template is stored in look-up tables or arrays.

47. (Previously Presented) The apparatus according to claim 34 wherein the controller is further programmed to decrease the first pressure in the absence of the detection of first events.

48. (Previously Presented) The apparatus according to claim 34 wherein the controller is further programmed to decrease the second pressure in the absence of the detection of second events.

49. (Cancelled)

50. (Previously Presented) In a CPAP apparatus having (i) a blower, (ii) a patient interface, (iii) an air delivery conduit for delivering air from the blower to the patient interface, (iv) at least one sensor adapted to sense pressure or flow and to generate at least one signal from said determined pressure or flow, and (v) a controller that determines transitions between inspiration and expiration of the patient's breathing cycle, and that causes said blower to provide a supply of air to the patient interface at

positive pressure in accordance with a pressure-time template, a method of controlling the blower operation comprising the steps of:

determining the presence of a first sleep disordered breathing event from said at least one signal; said first sleep disordered breathing event being in the group consisting of an apnea, a hypopnea, or a snore; and the presence of a second sleep disordered breathing event from said at least one signal; said second sleep disordered breathing event being characterized by flow flattening; where said first and second events are determined from different characteristics of said at least one signal,

setting a first pressure parameter of the pressure-time template for the expiration phase of the patient's breathing cycle in accordance with the first event and setting a second pressure parameter of the pressure-time template for the inspiratory phase of the patient's breathing cycle in accordance with the second event, and

controlling the blower to deliver a supply of air at positive pressure to the patient interface in accordance with the template and in synchrony with the determined transitions between inspiration and expiration of the patient's breathing cycle.

51-52. (Cancelled)

53. (Previously Presented) A method in accordance with claim 50 in which said template is one of a square wave and a shark-fin wave.

54. (Previously Presented) A method in accordance with claim 50 in which the first pressure parameter is an EPAP and the second pressure parameter is an IPAP.

55-60. (Cancelled)

61. (Previously Presented) A method in accordance with claim 50 in which the pressure-time template has a maximum allowable swing between the minimum and maximum values of pressure that is delivered to the patient interface by the blower.

62. (Previously Presented) A method in accordance with claim 51 wherein the first pressure parameter is decreased in the absence of an indication of apnea, hypopnea and snoring.

63. (Previously Presented) A method in accordance with claim 52 wherein the second pressure parameter is decreased in the absence of an indication of flow flattening and snoring.

64. (Previously Presented) A method in accordance with claim 50 wherein said pressure-time template is stored in look-up tables or arrays.

65. (Previously Presented) An apparatus adapted for treatment of sleep disordered breathing comprising:

a blower for providing to a patient a supply of air at a treatment pressure in phase with the patient's respiratory breathing cycle, the respiratory breathing cycle including an expiratory phase and an inspiratory phase;

a patient interface,

an air delivery conduit for delivering air from the blower to the patient interface,

at least one sensor for sensing pressure in the patient interface or flow of air to the patient and to generate at least one signal determined from said sensed pressure or flow, and

a controller for

determining transitions between inspiration and expiration of the patient's breathing cycle;

determining the presence first and second sleep disordered breathing events based on sensed pressure or flow, the first and second events being different indications of sleep disordered breathing and being based on different characteristics of said at least one signal; said first event being at least one of an apnea, a hypopnea, or a snore and said second event being a flow limitation, and

setting a first pressure as a function of the occurrence of one of said events and setting a second pressure as a function of the occurrence of the other of said events, the first pressure being used to determine the treatment pressure provided during the expiratory phase of the patient's breathing cycle and the second pressure being used to determine the treatment pressure provided during the inspiratory phase of the patient's breathing cycle.

66. (Cancelled)

67. (Previously Presented) The apparatus according to claim 65 wherein the second event is flow limitation.

68. (Previously Presented) The apparatus according to claim 65 wherein the first pressure is an EPAP or EEP pressure.

69. (Previously Presented) The apparatus according to claim 65 wherein the second pressure is an IPAP pressure.

70. (Cancelled)

71. (Previously Presented) The apparatus according to claim 70 wherein there is a predetermined maximum pressure difference between the first pressure and the second pressure.

72-73. (Cancelled)

74. (Previously Presented) The apparatus according to claim 65 wherein the controller causes the blower to provide the supply of air at positive pressure in accordance with a pressure-time template.

75. (Previously Presented) The apparatus according to claim 74 wherein the pressure-time template is a square wave.

76. (Previously Presented) The apparatus according to claim 74 wherein the pressure-time template is a shark-fin wave.

77. (Previously Presented) The apparatus according to claim 74 wherein the pressure-time template is stored in look-up tables or arrays.

78. (Previously Presented) The apparatus according to claim 65 wherein the controller further causes the blower to decrease the first pressure in the absence of the detection of first events.

79. (Previously Presented) The apparatus according to claim 65 wherein the controller further causes the blower to decrease the second pressure in the absence of the detection of second events.